

ABSTRACT

The present invention relates to multiple reflector light or solar energy concentrators and systems using such concentrators. More particularly, the invention is concerned with an arrangement of optical elements for the efficient collection of light while minimizing complexities of optics needed to achieve light collection and concentration. At least three reflectors are involved. A concave primary reflector receives the solar energy and sends it to a secondary convex reflector positioned in the focal zone of the first reflector. In turn, the secondary reflector sends the solar energy, at least in part, to a third non-imaging reflector positioned in the focal zone of the secondary reflector. In a system, a receiver is placed in the focal zone of the third reflector. The present arrangement allows for the receiver to be in a fixed position, enhancing the ability of certain variants of the system to generate steam directly in the receiver. Preferred embodiments of the concentrator can be either in a trough or a dish configuration.